

IN THE CLAIMS

Please amend claims 1, 3, 4, 8, 9, 15, 19 and 20 as follows:

1. (Amended) A control device, comprising:

A component having a magnetic portion, said magnetic portion having uniformly convex sidewalls that terminate at opposing polar portions symmetrically disposed [symmetry] about an axially disposed hole, said magnetic portion further having a shape effective to provide a desired transfer function and a construction effective to minimize magnetic flux distortion, cross talk and hysteresis;

a shaft extending into said hole;

at least one non-magnetic bushing supporting said component; and

at least one magnetic sensor disposed adjacent to said magnetic portion.

3. (Amended) The control device of claim 2 wherein said magnetic powders [are a mixture of] include neodymium [and ferrite].

~~4.~~ ^{5.} (Amended) The control device of claim 2 wherein said [magnetic portion has uniformly convex walls terminating at] opposing [planar] polar portions are planar.

8. (Amended) A control device, comprising:

A component having a magnetic portion, said magnetic portion having uniformly convex sidewalls that terminate at polar portions symmetrically disposed [symmetry] about an axially disposed hole, said magnetic portion further having a shape effective to provide a desired transfer function and a construction effective to minimize magnetic flux distortion, cross talk and hysteresis;

a hollow shaft having first and second opposing ends and extending through said hole;

a handle disposed at said first end of said hollow shaft;

a first magnet disposed within said hollow shaft in displacement from said component;

at least one first magnetic sensor disposed adjacent to said magnetic portion; and

at least one second magnetic sensor mounted to said hollow shaft in apposition to said first magnet.

9. (Amended) The control device of claim 8 wherein said first magnet is generally shaped as a cylinder and has north and south poles disposed along sidewalls [thereof] of said cylinder.

15. (Amended) The control device of claim 14 wherein said [magnetic portion has uniformly convex walls terminating at] opposing [planar] polar portions are planar.

19. (Amended) A [magnetic component] control device, comprising:

A [spheroidal] magnet in combination with one or more magnetic sensors, said magnet having a shape that is effective to provide [a desired] an essentially linear relationship with said one or more magnetic sensors between angle position and magnetic flux density [transfer function] and a construction effective to minimize magnetic flux distortion, cross talk and hysteresis, said magnet being formed from a uniform mixture of magnetic powders dispersed in a polymeric matrix.

20. (Amended) The [magnetic component] control device of claim 19 wherein said magnet is coated with a low coefficient of friction polymer.

Please add new claims 21-28 as follows:

---21. The control device of claim 19 wherein said magnet has a shape that is essentially spheroidal with uniformly convex sidewalls that terminate at opposing polar portions.

22. The control device of claim 21 wherein said opposing polar portions are planar.

23. The control device of claim 22 wherein a distance between said opposing polar portions provide said magnet with a desired angle of rotation.

24. The control device of claim 23 having a concave portion disposed between said uniformly convex sidewalls thereby providing said control device with a controlled non-linear relationship between angle position and magnetic flux density.

25. The control device of claim 21 wherein said magnet is coated within a non-magnetic material.